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EXAMINER	
YU, LIHONG	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	**Application No.** 10/581,667	**Applicant(s)** MAJIMA, TAICHI	
	Examiner LIHONG YU	**Art Unit** 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant’s amendment to claim 34, with respect to Examiner’s claim objection, has been fully considered and is persuasive. The objection of claim 34 has been withdrawn.

2. Applicants have amended the independent claims. Applicant's arguments with respect to the claim rejection have been considered but are moot in view of the new ground(s) of rejection.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claim 25 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 8 of copending Application No. 12/419,559.

Claim 31 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 9 of copending Application No. 12/419,559.

Claim 33 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 8 of copending Application No. 12/419,559.

Claim 34 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 9 of copending Application No. 12/419,559.

A comparison of claims is presented in the table below:

Instant Application 10/581,667	Application 12/419,559
25. (New) A transmission device <u>for 4-value FSK modulation for</u> <u>transmitting data using four symbol values</u>, the transmission device comprising:	**8.** (New) A method for <u>transmitting data using four symbol values</u> <u>for 4-value FSK modulation</u> whose data bits become the arrangement of the Gray code, the method comprising the steps of:
<u>a division unit configured to be inputted with original data arranged in order from one with highest importance, the original data comprising first data and second data after the first data, the first data being protected and the second data being unprotected, and to divide the first data into first single bit data components and divide the second data into second two bit data;</u>	<u>inputting original data arranged in order from one with highest importance, the original data comprising first data and second data after the first data, the first data being protected and the second data being unprotected, dividing the first data into first single bit data components and dividing the second data into second two bit data;</u>
<u>a redundant bit addition unit configured to add a redundant bit as a lower order bit to each of the first single bit data components to create</u>	<u>adding a redundant bit as a lower order bit to each of the first single bit data components to create first two bit data;</u>

first two bit data;	
wherein the redundant bit is determined so that the created first two bit data corresponds to any one of specific two symbol values of the four symbol values, an interval between the specific two symbol values being largest among the four symbol values; and	wherein the redundant bit is determined so that the created first two bit data corresponds to any one of specific two symbol values of the four symbol values, an interval between the specific two symbol values being largest among the four symbol values; and
a modulation unit configured to perform for 4-value FSK modulation on the basis of the first two bit data and the second two bit data.	performing modulation on the basis of the first two bit data and the second two bit data.
31. (New) A reception device for receiving a transmission signal of 4-value FSK modulation in which data has been transmitted using four symbol values, the reception device comprising: a demodulation unit configured to receive and demodulate the transmission signal, wherein the transmission signal is obtained by inputting original data arranged in order from one with highest importance, the original data comprising first data and second data after the first data, the first data being protected and the second data being unprotected, dividing the first data into first single bit data components and dividing the second data into second two bit data, adding a redundant bit as a lower order bit to each of the first single bit data components to create first two bit data,	**9.** (New) A method for receiving data comprising the steps of: receiving and demodulating a transmission signal in which data has been transmitted using four symbol values whose data bits become the arrangement of the Gray code, wherein the transmission signal is obtained by inputting original data arranged in order from one with highest importance, the original data comprising first data and second data after the first data, the first data being protected and the second data being unprotected, dividing the first data into first single bit data components and dividing the second data into second two bit data, adding a redundant bit as a lower order bit to each of the first single bit data components to create first two bit data, and performing 4-value FSK modulation on the basis of the first two bit data and the second two bit data;
wherein the redundant bit is determined so that the created first two bit data corresponds to any one of specific two symbol values of the four symbol values, an interval between the specific two symbol values being largest among the four symbol values; and	wherein the redundant bit is determined so that the created first two bit data corresponds to any one of specific two symbol values of the four symbol values, an interval between the specific two symbol values being largest among the four symbol values; and

performing 4-value FSK modulation on the basis of the first two bit data and the second two bit data;	performing a symbol decision at each Nyquist interval for the signal demodulated in the demodulating step;
a symbol decision unit configured to perform a symbol decision at each Nyquist interval for the signal demodulated by the demodulation unit	converting a symbol value obtained by the symbol decision performed in the symbol deciding step into a bit value; and
a bit conversion unit configured to convert a symbol value obtained by the symbol decision performed by the symbol decision unit into a bit value; and	composing a data string by deleting the added redundant bit from the data of the bit value converted in the symbol value converting step, to restore original data.
a data recovery unit configured to compose a data string by deleting the added redundant bit from the data of the bit value converted by the bit conversion unit, to restore original data.	
33. (New) A method for transmitting data using four symbol values for 4-value FSK modulation, the method comprising the steps of:	**8.** (New) A method for transmitting data using four symbol values for 4-value FSK modulation, whose data bits become the arrangement of the Gray code, the method comprising the steps of:
inputting original data arranged in order from one with highest importance, the original data comprising first data and second data after the first data, the first data being protected and the second data being unprotected, dividing the first data into first single bit data and dividing the second data into second two bit data;	inputting original data arranged in order from one with highest importance, the original data comprising first data and second data after the first data, the first data being protected and the second data being unprotected, dividing the first data into first single bit data components and dividing the second data into second two bit data;
adding a redundant bit as a lower order bit to each of the first single bit data components to create first two bit data;	adding a redundant bit as a lower order bit to each of the first single bit data components to create first two bit data;
wherein the redundant bit is determined so that the created first two bit data corresponds to any one of specific two symbol values of the four symbol values, an interval between the specific	wherein the redundant bit is determined so that the created first two bit data corresponds to any one of specific two symbol values of the four

two symbol values being largest among the four symbol values; and	symbol values, an interval between the specific two symbol values being largest among the four symbol values; and
performing 4-value FSK modulation on the basis of the first two bit data and the second two bit data.	performing modulation on the basis of the first two bit data and the second two bit data.
34. (New) A method for receiving data comprising the steps of:	**9.** (New) A method for receiving data comprising the steps of:
receiving and demodulating a transmission signal in which data has been transmitted using four symbol values, wherein the transmission signal is obtained by inputting original data arranged in order from one with highest importance, the original data comprising first data and second data after the first data, the first data being protected and the second data being unprotected, dividing the first data into first single bit data components and dividing the second data into second two bit data, adding a redundant bit as a lower order bit to each of the first single bit data components to create first two bit data,	receiving and demodulating a transmission signal in which data has been transmitted using four symbol values whose data bits become the arrangement of the Gray code, wherein the transmission signal is obtained by inputting original data arranged in order from one with highest importance, the original data comprising first data and second data after the first data, the first data being protected and the second data being unprotected, dividing the first data into first single bit data components and dividing the second data into second two bit data, adding a redundant bit as a lower order bit to each of the first single bit data to create first two bit data, and
performing 4-value FSK modulation on the basis of the first two bit data and the second two bit data;	performing 4-value FSK modulation on the basis of the first two bit data and the second two bit data;
wherein the redundant bit is determined so that the created first two bit data corresponds to any one of specific two symbol values of the four symbol values, an interval between the specific two symbol values being largest among the four symbol values; and	wherein the redundant bit is determined so that the created first two bit data corresponds to any one of specific two symbol values of the four symbol values, an interval between the specific two symbol values being largest among the four symbol values; and
performing a symbol decision at each Nyquist interval for the signal demodulated in the demodulating step;	performing a symbol decision at each Nyquist interval for the signal demodulated in the demodulating step;
converting a symbol value obtained by the symbol decision performed in the symbol deciding step into a bit value; and	converting a symbol value obtained by the symbol decision performed in the symbol

composing a data string by deleting the added redundant bit from the data of the bit value converted in the symbol value converting step, to restore original data.	deciding step into a bit value; and composing a data string by deleting the added redundant bit from the data of the bit value converted in the symbol value converting step, to restore original data.

Although the conflicting claims are not identical, they are not patentably distinct from each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 25-31, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over White et al (US 6,311,306 B1) in view of Labonte et al (US 5,828,672) and Dehner et al (US 5,473,612).

Consider claims 25 and 33:

White discloses a method for transmitting data using four symbol values for 4-value FSK modulation (see White at Fig. 3, col. 6, lines 59-67 and col. 7, lines 1-5, where White describes a

modulation scheme with Gray code 11, 10, 00 and 01 as data symbols, which can be used for 4-value FSK modulation), the method comprising the steps of:

- inputting original data arranged in order from one with highest importance, the original data comprising first data and second data after the first data (see White at Fig. 2 and col. 4, lines 41-64, where White describes the data comprises a set (A_0, A_1, ..., B_0, B_1, ...*), wherein* A_0, A_1, ... are more important code bits and B_0, B_1, ... are less important code bits), the first data being protected and the second data being unprotected (see White at Fig. 5 and col. 9, lines 34-67, where White describes transmitting the low importance data bits with no error control coding and a coder 504 to code the important information, that is protected);
- dividing the first data into first bit data components and dividing the second data into second bit data (see White in col. 8, lines 28-53, where White describes the data is divided into first subset (A_0, A_1, ...) and second subset (B_0, B_1, ...)),
- adding a redundant bit as a lower order bit to each of the first bit data components to create first data (see White at col. 9, lines 20-25, where White describes the more important bits are provided with redundancy; see White at Fig. 3, col. 6, lines 59-67 and col. 7, lines 1-5, where White describes four 2-bit symbol values: +3, +1, -1 and -3, that correspond to the bit values 11, 10, 00 and 01 respectively); and
- performing 4-value FSK modulation on the basis of the first two bit data and the second two bit data (see White at col. 6, lines 59-67 and col. 7, lines 1-5, where White describes the symbols are modulated).

White does not specifically disclose: (1), each bit set in (A_0, A_1, ...) has a single bit of data, and each bit set in (B_0, B_1, ...) has two bits of data, and one redundancy bit is added to each of the first bit data; (2), the redundant bit is determined so that the created first two bit data corresponds to any one of specific two symbol values of the four symbol values, an interval between the specific two symbol values being largest among the four symbol values; and (3), the above modulation is FSK modulation.

Regarding (1) above, in an analogous art, Labonte discloses dividing a first data into first bit data by one bit and dividing a second data into second bit data by two bits, and one redundancy bit is added to each of the first bit data (see Labonte at Fig. 3 and col. 5, lines 46-60, where Labonte describes data bits are divided into Class 1 bits and Class 2 bits; Class 1 bits are protected with a one-to-two coder in which one redundancy bit is added for each voice bit, Class 2 bits are not protected; Class 2 bits are 82 bits in length, that is 41 two-bits).

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of White, to divide the first data into first bit data by one bit, to divide the second data into second bit data by two bits, and to add a redundant bit to each of the first bit data, as taught by Labonte, thus allowing for an effective error correction, as discussed by Labonte (see Labonte at col. 5, lines 30-46).

Regarding (2) and (3) above, Dehner teaches creating two bit data corresponds to any one of specific two symbol values of the four symbol values, an interval between the specific two symbol values being largest among the four symbol values (see Dehner in col. 11, lines 1-12, where Dehner describes 4-value FSK modulation with symbol values -1, +1, -3 and +3, a sync word comprises symbols with symbol values -3 and +3, that is the largest symbol value interval).

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of White, and to create first two bit data corresponds to any one of specific two symbol values of the four symbol values, an interval between the specific two symbol values being largest among the four symbol values, and to perform FSK, as taught by Dehner, thus allowing for minimizing the effect of noise, as discussed by Dehner (see Dehner in col. 11, lines 1-12).

Consider claims 31 and 34:

White discloses a method for receiving data (see White at col. 8, lines 45-67, where White describes decoding the received symbols) comprising the steps of:

- receiving and demodulating a transmission signal in which data has been transmitted using four symbol values, wherein the transmission signal is obtained by inputting original data arranged in order from one with highest importance, the original data comprising first data and second data after the first data, the first data being protected and the second data being unprotected, adding a redundant bit as a lower order bit to the first bit data to create first 2 bits data, of the four symbol values, and
- performing modulation on the basis of the first two bit data and the second two bit data (see the discussion for claim 1 above, where White discloses the transmitted symbols as recited here; see White at col. 8, lines 45-65, where White describes decoding the received symbols by a data recipient);
- performing a symbol decision at each Nyquist interval for the signal demodulated in the demodulating step (see White at col. 8, lines 45-65, where White describes

decoding the received symbols to determine what bits were transmitted by a data source when a symbol is received);

- converting a symbol value obtained by the symbol decision performed in the symbol deciding step into a bit value (see White at col. 8, lines 45-65, where White describes decoding the first bit and the second bit of each 2-bit word; see White at Fig. 3 and col. 7, lines 6-31, where White shows the constellation and mapping a symbol to its value); and
- composing a data string to restore original data (see White at col. 8, lines 45-65 and col. 7, lines 6-31).

However, White does not specifically disclose: (1), each bit set in (A_0, A_1, ...) has a single bit of data, and each bit set in (B_0, B_1, ...) has two bits of data, and one redundancy bit is added to each of the first bit data; (2), the redundant bit is determined so that the created first two bit data corresponds to any one of specific two symbol values of the four symbol values, an interval between the specific two symbol values being largest among the four symbol values; (3), the above modulation is FSK modulation, and (4), deleting the added redundant bit from the data of the bit value converted in the symbol value converting step.

Regarding (1) and (4) above, in an analogous art, Labonte discloses dividing a first data into first bit data by one bit and dividing a second data into second bit data by two bits, and one redundancy bit is added to each of the first bit data (see Labonte at Fig. 3 and col. 5, lines 46-60, where Labonte describes data bits are divided into Class 1 bits and Class 2 bits; Class 1 bits are protected with a one-to-two coder in which one redundancy bit is added for each voice bit, Class 2 bits are not protected; Class 2 bits are 82 bits in length, that is 41 two-bits), and

deleting the added redundant bit from the data of the bit value (see Labonte at col. 4, lines 11-27, where Labonte describes the redundancy bits are removed at the receiver).

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of White, to divide a first data into first bit data by one bit, to divide a second data into second bit data by two bits, to add a redundant bit to each of the first bit data and to delete the added redundant bit from the data of the bit value converted in the symbol value converting step, as taught by Labonte, thus allowing for an effective error correction, as discussed by Labonte (see Labonte at col. 5, lines 30-46).

Regarding (2) and (3) above, Dehner teaches creating two bit data corresponds to any one of specific two symbol values of the four symbol values, an interval between the specific two symbol values being largest among the four symbol values (see Dehner in col. 11, lines 1-12, where Dehner describes 4-value FSK modulation with symbol values -1, +1, -3 and +3, a sync word comprises symbols with symbol values -3 and +3, that is the largest symbol value interval).

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of White, and to create first two bit data corresponds to any one of specific two symbol values of the four symbol values, an interval between the specific two symbol values being largest among the four symbol values, and to perform FSK, as taught by Dehner, thus allowing for minimizing the effect of noise, as discussed by Dehner (see Dehner in col. 11, lines 1-12).

Consider claim 26:

White in view of Labonte and Dehner discloses the invention according to claim 25 above. White discloses each of the first data to be protected comprises flag data (see White at Fig. 2 and col. 4, lines 41-64, where White describes a subdivider 202 that divides a code vector 111 into two subsets of code bits 204 and 206, therefore, each data has a flag to indicate its level of importance).

Consider claim 27:

White in view of Labonte and Dehner discloses the invention according to claim 25 above. However, White does not specifically disclose the original data includes bits for error check and the first data to be protected includes the bits for error check.

Labonte teaches a original data includes bits for error check and a first data to be protected includes bits for error check (see Labonte at col. 5, lines 46-60 and col. 6, lines 12-29, where Labonte describes applying 7 CRC bits to the class 1 bits for error check).

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of White, and to have that the original data includes bits for error check and the first data to be protected includes the bits for error check, as taught by Labonte, thus allowing for an effective error correction, as discussed by Labonte (see Labonte at col. 5, lines 30-46).

Consider claim 28:

White in view of Labonte and Dehner discloses the invention according to claim 25 above. However, White does not specifically disclose the original data includes bits for error correction and the first data to be protected includes the bits for error correction.

Labonte teaches a original data includes bits for error correction and a first data to be protected includes bits for error correction (see Labonte at col. 6, lines 12-29, where Labonte describes that if there is a CRC discrepancy, then the frame is dropped by the CRC decoder, that is, the CRC is used for error correction).

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of White, and to have that the original data includes bits for error correction and the first data to be protected includes the bits for error correction, as taught by Labonte, thus allowing for an effective error correction, as discussed by Labonte (see Labonte at col. 5, lines 30-46).

Consider claim 29:

White in view of Labonte and Dehner discloses the invention according to claim 25 above. However, White does not specifically disclose the number of the first data to be protected is less than the number of the second data to be unprotected.

Labonte teaches the number of the first data to be protected is less than the number of the second data to be unprotected (see Labonte at col. 5, lines 46-60, where Labonte describes 77 class 1 bits which has error protection, and 82 class 2 bits which has no error protection).

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of White, and to have that the number of the first data to be protected is less than the number of the second data to be unprotected, as taught by Labonte, thus allowing for an effective error correction, as discussed by Labonte (see Labonte at col. 5, lines 30-46).

Consider claim 30:

White in view of Labonte and Dehner discloses the invention according to claim 25 above. White discloses the original data represents a plurality of pieces of information (see White at Fig. 2 and col. 4, lines 41-64, where White describes a code vector 111), and the redundant bit addition unit operates for respective ones of the plurality of pieces of information (see White at col. 9, lines 20-25, where White describes the more important bits are provided with redundancy).

White does not specifically disclose adding the redundant bit to each of the first data to be protected to generate coded data.

Labonte discloses adding the redundant bit to each of the first data to be protected to generate coded data (see Labonte at Fig. 3 and col. 5, lines 46-60, where Labonte describes data bits are divided into Class 1 bits and Class 2 bits; Class 1 bits are protected with a one-to-two coder in which one redundancy bit is added for each voice bit, Class 2 bits are not protected; Class 2 bits are 82 bits in length, that is 41 two-bits).

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of White, and to add the redundant bit to each of the first data to be protected to generate coded data, as taught by Labonte, thus allowing for an effective error correction, as discussed by Labonte (see Labonte at col. 5, lines 30-46).

7. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over White et al (US 6,311,306 B1) in view of Labonte et al (US 5,828,672) and Dehner et al (US 5,473,612), as applied to claim 31 above, and further in view of Persson (US 4,277,778).

Consider claim 32:

White in view of Labonte and Dehner discloses the reception device according to claim 31 above. White does not disclose the demodulation unit demodulates the received signal by converting the received signal into a signal of a voltage corresponding to a frequency of the received signal, and the symbol decision unit performs the symbol decision by comparing the voltage of the signal, which has been demodulated by the demodulation unit, with preset threshold values.

Persson teaches demodulating a received signal by converting the received signal into a signal of a voltage corresponding to a frequency of the received signal, and performing the symbol decision by comparing the voltage of the signal, which has been demodulated by the demodulation unit, with preset threshold values (see Persson at Fig. 4, col. 3, lines 64-68 and col. 4, lines 1-15, where Persson describes a FSK demodulator with a comparator).

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of White, to demodulate the received signal by converting the received signal into a signal of a voltage corresponding to a frequency of the received signal, and to perform the symbol decision by comparing the voltage of the signal, which has been demodulated by the demodulation unit, with preset threshold values, as taught by Persson, thus

allowing for generating quick results, as discussed by Persson (see Persson at col. 1, lines 10-27).

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIHONG YU whose telephone number is (571)270-5147. The examiner can normally be reached on 8:30 am-7:00 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on (571) 272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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